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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER	
ROSWELL, MICHAEL	

ART UNIT	PAPER NUMBER
2173	

MAIL DATE	DELIVERY MODE
06/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/873,163	OLSON ET AL.	
	Examiner	Art Unit	
	Michael Roswell	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,20,23-30 and 32-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,20,23-30 and 32-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Request for Continued Examination filed 29 March 2007.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-17, 20, 23-30, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer et al (US Patent 5,742,504), hereinafter Meyer, Van Dort et al (US Patent 5,537,104), hereinafter Van Dort, and Silver et al (US Patent 6,931,602), hereinafter Silver. Further evidenced by Matrix Vision (http://www.matrix-vision.com/news/print.php?ProductID=10&lang=en).

Regarding claim 1, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Meyer also teaches a link function enabling a user to configure any second VP using the machine vision UI (taught as the camera control of col. 5, lines 57-67), and for establishing communication between a second VP in the machine vision

system and the machine vision UI (taught as the linking of a camera to a Camera control, at col. 6, lines 10-16). Meyer further teaches enabling communication via the network established by the link function enabling a continually updated image display on the at least one machine vision UI representing a current state of a second VP in the machine vision system (taught as the display of live images, at col. 6, lines 10-18). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach providing a first VP with a link function, the link function being a control function executable by the first VP, and executing the link function so as to issue instructions from the first VP to the UI to establish communication with a second VP.

Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of Van Dort may be used to generate "mark" and "link" signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in

order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claim 2, Van Dort teaches a control function having a plurality of parameters, including an identifier of a second VP, taught as the use of an event table enabling response to a multitude of events, and destination addresses in the table to facilitate communication between devices, at col. 6, lines 43-53.

Regarding claim 3, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claims 4, 25, and 28, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the graphical representation of Meyer to include selectable underlined text strings. Applicant has not disclosed that underlined text strings provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the iconic representations of Meyer because both graphical representations involve "point and click" functionality, and produce the same end result.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Meyer and Van Dort to obtain the invention as specified in claims 4, 25, and 28.

Regarding claim 5, Van Dort teaches a control function having a plurality of parameters, including an identifier of a second VP, taught as the use of an event table enabling response to a multitude of events, and destination addresses in the table to facilitate communication between devices, at col. 6, lines 43-53.

Regarding claims 6 and 7, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claims 8 and 9, check boxes and radio buttons in user interfaces are extremely well known in the art, being present in simple java applets up to more complex applications. Therefore, it would have been obvious to one of ordinary skill in the art to include check boxes and radio buttons in a machine vision user interface.

Regarding claims 10-12, Van Dort teaches executing a link function in response to an external event, taught as the execution of a link function in response to events such as a person turning a knob, or temperature reaching a certain value, which may certainly be related in an industrial process, at col. 6, lines 41-43.

Regarding claim 13, the link function of Van Dort is inherently initiated by a programmatic decision, as parameters in the event table of col. 6, lines 37-53 must be at certain values before the link function is executed.

Regarding claim 14, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claim 15, the link function of Van Dort is inherently included in a function execution sequence of a VP each time it is executed.

Regarding claim 16, the camera control function of Meyer allows for the control of one camera, and therefore must close communication with a previously controlled camera. See Meyer, col. 5, lines 57-67 and col. 6, lines 1-20.

Regarding claim 17, Meyer teaches the display of live images on a machine vision UI provided by a camera, which may be a first or second VP, taught as the display of live images, at col. 6, lines 10-18.

Regarding claim 20, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach executing the link function so as to issue instructions from the first VP to the machine vision UI to establish communication with a second VP.

Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of Van Dort may be used to generate "mark" and "link" signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claims 23-24, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claim 26, Meyer and Van Dort have been shown *supra* to teach a graphical representation being adapted to respond to user action so as to cause a first VP to instruct a UI

to establish communication with a second VP in the machine vision system, the communication enabling a continually updated image display on the UI representing a current state of the second VP, and enabling a user to configure the second VP using the at least one UI. See Meyer, col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20 and Van Dort, col. 5, lines 55-64.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the graphical representation into a spreadsheet. Applicant has not disclosed that the incorporation of the graphical representation into a spreadsheet provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the toolbar of Meyer because a toolbar and a spreadsheet with a graphical representation included would have similar column and row structure, and similar "point and click" functionality.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Meyer and Van Dort to obtain the invention as specified in claim 26.

Furthermore, the devices of Meyer and Van Dort communicate over a network due to their connection to the bus **26** taught at col. 4, lines 29-30. Bus networks (a configuration for a Local Area Network wherein all nodes are connected to a main communications line [bus]) are well known in the art, and allow for the inclusion of external devices into a system such as that of Fig. 2 of Meyer.

Regarding claim 27, the camera control function of Meyer allows for the control of one camera, and therefore must close communication with a previously controlled camera. See Meyer, col. 5, lines 57-67 and col. 6, lines 1-20.

Regarding claim 29, it can be seen in Figs. 4 and 6 of Meyer that the graphical representation for controlling a VP is an iconic representation.

Regarding claim 30, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach executing the link function so as to issue instructions from the first VP to the machine vision UI to establish communication with a second VP.

Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of

Van Dort may be used to generate "mark" and "link" signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claims 33-34, Meyer teaches user action being a mouse click upon a graphical representation, taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from

those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20. Furthermore, the use of underlined text strings as a user manipulable graphical entity (i.e. linking from one web page to another) is notoriously well known in the art, and would have been obvious to substitute in place of the graphical representation stated above.

Claims 22 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer, Van Dort, Silver and Blowers et al (US Patent 6,298,474), hereinafter Blowers. Further evidenced by Matrix Vision (http://www.matrix-vision.com/news/print.php?ProductID=10&lang=en).

Meyer, Van Dort and Silver have been shown *supra* to teach a graphical representation being adapted to respond to user action so as to cause a first VP on a first VP computing platform to instruct a machine vision UI on a machine vision UI computing platform to establish communication with a second VP on a second VP computing platform, the communication enabling a continually updated image display on the machine vision UI representing the current state of the second VP, and enabling a user to configure the second VP using the machine vision UI.

Meyer, Van Dort and Silver fail to explicitly teach a network supporting TCP/IP protocol.

Blowers teaches the use of a network for vision processor/user interface communication (Column 9, Lines 26-28), where the network communicates using TCP/IP protocol (Column 6, Lines 43-45).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the teachings of Meyer, Van Dort and Silver with those of Blowers to obtain

the machine vision system described above by Meyer, Van Dort and Silver that communicates over a network using TCP/IP network protocol.

Motivation for such a combination is given by Blowers, who states the inclusion of such configuration: "there is illustrated schematically a machine vision system generally indicated at **20** generally of the type which can be supported by the method and system of the present invention" (Column 7, Lines 40-43).

Response to Arguments

Applicant's arguments filed 29 March 2007 have been fully considered but they are not persuasive.

Firstly, the examiner believes applicant to be referring to an incorrect copy of Meyer (US Patent 5,742,504), as various portions cited by applicant do not match those of the examiner. For instance, applicant argues on page 13 that col. 7, line 65 to col. 8, line 10 teaches "custom controls for image processing...", while the examiner can find no such teaching at col. 7 and col. 8, instead being found at col. 4, lines 38-43. Further on page 13, applicant remarks that Meyer at col. 4, lines 54-63 fails to explicitly teach a "Visual Basic toolbox", whereas the examiner's copy does recite the use of such a toolbox.

In response to applicant's arguments of pages 10-13 of the remarks, that Meyer fails to teach a plurality of Vision Processors (VPs), the examiner respectfully disagrees. The examiner has included the Matrix Vision reference to illustrate that at the time of applicant's invention, digital cameras capable of image processing and thus acting as

VPs were known in the art. Therefore, applicant's further arguments that the digital cameras of Meyer are deemed moot.

Furthermore, with respect to applicant's argument that Meyer teaches image processing being done at the mass storage unit **32**, the examiner respectfully submits that a storage unit is incapable of processing, as it does not have the requisite processor power. The cited passage of Meyer discloses that the machine vision software may reside on the mass storage unit, and is not where image processing takes place.

The examiner further maintains that as the cameras of Meyer contain requisite processing power to be considered VPs, the connection from the cameras to the machine vision system may be considered to be networked, regardless of the type of connection used.

Furthermore, applicant at pages 13-14 of the remarks notes that a "toolbox" is not a user interface, but merely a set of tools for building a user interface. The examiner refers applicant to col. 5, lines 1-32, which disclose the manipulation of the machine vision system through user interaction with the disclosed toolbox.

Further at page 14, applicant argues that Meyer "mentions only a single machine vision system". The examiner would like to note that all of applicant's independent claims recite "**a** machine vision system" and there is no explicit mention in the claims to a plurality of machine vision systems.

On page 15 of the remarks, applicant notes that Meyer at col. 6, lines 10-18 do not cite the display of live image views. The examiner once again notes that this may

be do to applicant referencing a different copy of Meyer, as col. 6, lines 10-18 as seen by the examiner begins, "Before live image views can be displayed an before live images can be grabbed..."

In response to applicant's argument of pages 15-18 with respect to Van Dort and the use of control functions associated with a VP, the examiner again notes that Van Dort explicitly teaches at col. 5, lines 55-64 a change in state triggering a communication between a first device and a second device, in which the second device "will change [its] state in a way contained or impled by the message." The examiner further remarks that applicant's argument of mark signals is irrelevant, as Van Dort teaches the explicit use of link signals in the same cited passage.

In response to applicant's arguments with respect to Silver, the examiner respectfully disagrees. Applicant argues at page 19 that Silver fails to teach multiple vision processor systems. However, at col. 3, lines 21-23 Silver states, "Machine vision tool computer **104** includes at least one machine vision tool **302**", which clearly allows for the use of more than one machine vision tool. The examiner further maintains that Silver is only relied upon to teach the communication of VPs and a UI over a network, and not to teach the explicit features of the link function, as argued.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Roswell whose telephone number is (571) 272-4055. The examiner can normally be reached on 8:30 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Roswell
6/7/07

TADESSE HAILU
PRIMARY EXAMINER